

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Consumer Protection & Safety Division
Safety & Reliability Branch
Rail Transit Safety Section

RESOLUTION ST-67
December 18, 2003

RESOLUTION

RESOLUTION GRANTING SAN FRANCISCO MUNICIPAL RAILWAY AUTHORITY TO DEVIATE FROM SIDE CLEARANCE REQUIREMENTS OF GENERAL ORDER 143-B AT TWO HALF-GRAND UNIONS ON THE THIRD STREET LIGHT RAIL LINE.

Summary

This resolution responds to San Francisco Municipal Railway's (MUNI) request for authority to deviate from certain side clearance requirements of General Order (GO) 143-B, Title 9.06, C.2. It specifically authorizes reduced side clearances adjacent to MUNI light rail vehicles (LRVs) and historic streetcars in the construction and operation of the Third Street Light Rail Line at two half-grand unions. Authority is granted subject to specific design, construction, and operating safety mitigations.

The Project

MUNI's Third Street Light Rail Project, Phase One, will extend light rail train service 5.4 miles from the existing line near the Caltrain Station at Fourth and King Streets, southerly along the Third Street Corridor, to the San Francisco City and County line on Bayshore Boulevard near Sunnydale Avenue. MUNI's Metro East Light Rail Vehicle Storage and Maintenance Facility (Metro East) is being constructed one block East of the Third Street Line on Illinois Street and is bordered by 25th Street to the North side and Cesar Chavez Street to the South. Phase One of MUNI's Third Street Light Rail Project is currently scheduled to begin service in 2005. The Metro East Project is scheduled to be complete and operable in 2006.

MUNI plans to construct and operate its Third Street Line, within Third Street, with half-grand unions at 25th Street and Cesar Chavez Street. The half-grand unions would connect the Third Street Line with the Metro East facility via tracks in Cesar Chavez Street and in 25th Street.

Background

The project includes two proposed locations where half-grand unions would be constructed to allow movement of LRVs over lead tracks between the Third Street Line and the Metro East facility. Half-grand unions connect a double track main line with an intersecting double track lead. The track switches and turnouts in the half-grand unions allow train movement between the main line and lead. The lead tracks, in this instance, are the sections of track connecting the half-grand union with the Metro East facility and the combination allows the movement of trains between the facility and the main line. Due to limited widths of right of way available for construction of the half-grand unions, MUNI is unable to provide the side clearances required for LRVs by GO 143-B.

By letter dated October 31, 2000, MUNI requested authority to deviate from side clearance requirements of GO 143-B, Title 9.06, c.2 at two half-grand unions in the construction and operation of its Third Street Light Rail Line. The specific locations are:

- 25th Street and Third Street and;
- Cesar Chavez Street and Third Street.

GO 143-B Title 9.06, c.2 specifies that at locations and in areas where passengers, employees, and other persons are normally prohibited while trains are in motion, the minimum clearance shall be eighteen (18) inches. MUNI's analyses of passing clearances of possible combinations of on-rail vehicles at each of the half-grand unions concluded that the dynamic envelope side clearances would be as little as 4 inches. Under no circumstance would passing on-rail equipment actually collide.

MUNI would mitigate the hazard created by the proposed reduced clearance by the installation of a signaled interlocking at both of the half-grand unions. The interlocking system would not allow conflicting movements or movements that would create train side clearances less than those specified by GO 143-B within the limits of the interlocking plant.

In the event of a signal system failure, restrictive manual operating procedures would be employed. MUNI operating Rule 4.47 Passing Another Train prohibits any trains, which are approaching from opposite directions, to pass on any curve located in a street intersection.

As part of MUNI's Safety Certification process, the MUNI Safety Certification Committee reviewed the proposed design and the recommended hazard mitigations. After completing its review, the Committee formally approved the proposal as presented in MUNI's October 31, 2000 letter.

Proposed Hazard Mitigations

The Commission staff generally agreed with MUNI's proposals. However, staff was concerned that the language in MUNI's operating Rule 4.47 would not clearly address all of the conditions, which could result in reduced side clearances at the half-grand unions. In addition to the reduced side clearances that would be experienced when trains pass on concentric curves, reduced side clearances would be created by trains passing on diverging and converging tracks. The only train passing movements that could not result in reduced side clearances would be those that take place on the tangent double track main line. Any train passing movements, with at least one train operating on a curved track within the half-grand union, could result in LRV side clearances less than those required by GO 143-B.

After discussion, MUNI and staff reached agreement on the following project related hazard mitigations:

1. MUNI will incorporate signaled interlocking plants into its half-grand unions at 25th Street and Third Streets and at Cesar Chavez Street and Third Street
2. The interlocking system will not allow any conflicting train movements or train movements that could result in side clearances less than those specified for light rail vehicles or other on rail vehicles by GO 143-B at any location within its limits.
3. MUNI will adopt and implement operating rules and/or procedures that would prohibit more than one train or other on-rail vehicle from operating

within the limits of the half-grand union interlocking plants unless all train's routes were aligned to operate only on tangent track.

4. The rules and/or procedures adopted to satisfy the conditions addressed in the above listed procedural hazard mitigation, will be submitted, by MUNI, to the Commission's staff for review and MUNI shall not operate trains over the affected tracks before Commission staff approval of the rules and/or procedures.

Discussion

MUNI plans to construct and operate its Third Street Line, within Third Street, with half-grand unions at 25th Street and Cesar Chavez Street. The half-grand unions would connect the Third Street Line with the Metro East facility via tracks in Cesar Chavez Street and in 25th Street.

MUNI is seeking authority to deviate from the side clearance requirements in GO 143-B because of limited right of way widths available to construct these tracks and related facilities.

Staff is in agreement with MUNI that the proposed half-grand unions could be safely operated, with the reduced side clearances, by employing the specific safety mitigations that have been identified in this document.

Comments

This is an uncontested matter in which the resolution grants the authority requested. Pursuant to Public Utilities Code Section 311(g)(2), the otherwise applicable 30-day period for public review and comment is being waived.

Findings

1. By letter dated October 31, 2000, MUNI requested authority to deviate from the side clearance requirements of GO 143-B, Title 9.06, c.2 at specific half-grand unions in the construction and operation of its proposed Third Street Light Rail Line.
2. The specific locations identified for creation and maintenance of the half-grand unions with reduced side clearances are:

- 25th Street and Third Street and;
 - Cesar Chavez Street and Third Street.
3. MUNI has agreed to carry out the design, construction, operation, and maintenance process in accordance with its System Safety Program Plan and the project Safety Certification Plan.
 4. MUNI proposed to mitigate hazards created by the proposed reduced side clearance conditions with the installation of a signaled interlocking plant at each of the half-grand unions.
 5. MUNI will design and construct the interlocking plants to prevent conflicting train movements or movements that would result in side clearances less than those specified by GO 143-B, Title 9.06 CLEARANCES for light rail vehicles within the limits of the interlocking plant.
 6. MUNI will adopt operating procedures which preclude any conflicting movement of trains and any movement of trains that would result in side clearances less than those prescribed by GO 143-B, Title 9.06 CLEARANCES in the event of a signal system failure.
 7. MUNI will submit the proposed operating procedures to the Commission's staff for review and approval prior to their implementation and the operation of trains over the affected MUNI tracks.
 8. MUNI and staff agree that the proposed mitigations are adequate to ensure safe operation with the reduced clearances.

Therefore, IT IS ORDERED that:

1. San Francisco Municipal Railway's request for authority to deviate from the requirements of GO 143-B Title 9.06, c. on its proposed Third Street Light Rail Line is granted for:
 - a. A half-grand union located in 25th Street at Third Street and;
 - b. A half-grand union located in Cesar Chavez Street at Third Street;

2. San Francisco Municipal Railway shall employ sound safety design, construction, operating, and maintenances practices in accordance with its System Safety Program Plan and Safety Certification Plan to design, construct, and operate the Third Street Light Rail Line and shall:
 - a. Ensure that the design and construction of the interlocking plants preclude conflicting train movements or movements that would result in side clearances less than those specified by GO 143-B, Title 9.06 CLEARANCES for light rail vehicles within the limits of the interlocking plant;
 - b. Ensure that restrictive operating procedures are adopted, which would preclude any conflicting movement of trains and any movement of trains that would result in side clearances less than those prescribed by GO 143-B, Title 9.06 CLEARANCES, in the event of a signal system failure;
 - c. Ensure the rules and/or procedures adopted to satisfy the conditions addressed in (b.), will be submitted, by MUNI, to the Commission's staff for review and MUNI shall not operate trains over the affected tracks before Commission staff approval of the rules and/or procedures.
3. Authority to create and maintain reduced side clearances is limited to the specific locations and conditions identified in this order.
4. This resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed, and adopted by the Commission at its regularly scheduled meeting on December 18, 2003. The following Commissioners voted favorably thereon:

William Ahern
Executive Director